

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No. : 10/603,495 Confirmation No. : 3535  
Applicant : Creamer, *et al.*  
Filed : June 25, 2003  
TC/A.U. : 2192  
Examiner : Neway, Samuel G.  
Docket No. : BOC9-2002-0070 (367)

---

DECLARATION UNDER 37 C.F.R. § 1.131

---

Commissioner for Patents  
P. O. Box 1450  
Alexandria, VA 22313-1450

Sir:

I, Thomas E. Creamer, a citizen of the United States, residing in Boca Raton, Florida, hereby declare and state as follows:

1. I was employed by International Business Machines Corporation (IBM) of Armonk, New York at the time the above-identified application was conceived. I make this declaration in support the above-identified application.
2. IBM has invested substantial time and effort into the research, development, and marketing of their products, and in an effort to protect its rights in all new inventions, IBM requests that all employees prepare and submit confidential Invention Disclosure Forms upon conception by the inventor(s).
3. As a named co-inventor for this invention, I and my co-inventors prepared and submitted the attached Invention Disclosure No. BOC8-2002-0056 (hereinafter "Invention Disclosure") pursuant to IBM guidelines.
4. The Invention Disclosure was originally submitted for consideration to an IBM Attorney/Patent Professional for preparation of a patent application on April 29, 2002, and was insubstantially modified on August 22, 2002. The content of the Invention Disclosure has not been subsequently modified. The Invention Disclosure represents a fully conceived and workable invention as written. I reviewed the claims of the above-mentioned patent application prior to submission of the application to assure the claimed invention was fully supported by the

Invention Disclosure in light of the Invention Disclosure and art known at the time of the disclosure.

5. I diligently worked with outside counsel to prepare and file the above-mentioned patent application.

6. I make this Declaration to establish that my co-inventors and I conceived of the present invention at least as early as April 29, 2002, and exercised due diligence from that date to the date of filing for the above-identified patent application.

7. I further declare that all statements made herein of my own knowledge are true and all statements made on information and belief are believed to be true and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment or both under Section 1001 of Title 18 of the United States Code, and that such willful, false statements may jeopardize the validity of the above-identified patent application or any patent issuing thereon.

  
THOMAS E. CREAMER

Date: 5-28/2007

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No. : 10/603,495 Confirmation No. : 3535  
Applicant : Creamer, *et al.*  
Filed : June 25, 2003  
TC/A.U. : 2192  
Examiner : Neway, Samuel G.  
Docket No. : BOC9-2002-0070 (367)

---

DECLARATION UNDER 37 C.F.R. § 1.131

---

Commissioner for Patents  
P. O. Box 1450  
Alexandria, VA 22313-1450

Sir:

I, Peeyush Jaiswal, a citizen of the United States, residing in Boca Raton, Florida, hereby declare and state as follows:

1. I was employed by International Business Machines Corporation (IBM) of Armonk, New York at the time the above-identified application was conceived. I make this declaration in support the above-identified application.
2. IBM has invested substantial time and effort into the research, development, and marketing of their products, and in an effort to protect its rights in all new inventions, IBM requests that all employees prepare and submit confidential Invention Disclosure Forms upon conception by the inventor(s).
3. As a named co-inventor for this invention, I and my co-inventors prepared and submitted the attached Invention Disclosure No. BOC8-2002-0056 (hereinafter "Invention Disclosure") pursuant to IBM guidelines.
4. The Invention Disclosure was originally submitted for consideration to an IBM Attorney/Patent Professional for preparation of a patent application on April 29, 2002, and was insubstantially modified on August 22, 2002. The content of the Invention Disclosure has not been subsequently modified. The Invention Disclosure represents a fully conceived and workable invention as written. I reviewed the claims of the above-mentioned patent application prior to submission of the application to assure the claimed invention was fully supported by the

Invention Disclosure in light of the Invention Disclosure and art known at the time of the disclosure.

5. I diligently worked with outside counsel to prepare and file the above-mentioned patent application.

6. I make this Declaration to establish that my co-inventors and I conceived of the present invention at least as early as April 29, 2002, and exercised due diligence from that date to the date of filing for the above-identified patent application.

7. I further declare that all statements made herein of my own knowledge are true and all statements made on information and belief are believed to be true and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment or both under Section 1001 of Title 18 of the United States Code, and that such willful, false statements may jeopardize the validity of the above-identified patent application or any patent issuing thereon.

PeeYush Jaiswal  
PEEYUSH JAISWAL

Date: 5/28/07

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No. : 10/603,495 Confirmation No. : 3535  
Applicant : Creamer, *et al.*  
Filed : June 25, 2003  
TC/A.U. : 2192  
Examiner : Neway, Samuel G.  
Docket No. : BOC9-2002-0070 (367)

---

DECLARATION UNDER 37 C.F.R. § 1.131

---

Commissioner for Patents  
P. O. Box 1450  
Alexandria, VA 22313-1450

Sir:

I, Christopher J. Pavlovski, a citizen of Australia, hereby declare and state as follows:

1. I was employed by International Business Machines Corporation (IBM) of Armonk, New York at the time the above-identified application was conceived. I make this declaration in support the above-identified application.
2. IBM has invested substantial time and effort into the research, development, and marketing of their products, and in an effort to protect its rights in all new inventions, IBM requests that all employees prepare and submit confidential Invention Disclosure Forms upon conception by the inventor(s).
3. As a named co-inventor for this invention, I and my co-inventors prepared and submitted the attached Invention Disclosure No. BOC8-2002-0056 (hereinafter "Invention Disclosure") pursuant to IBM guidelines.
4. The Invention Disclosure was originally submitted for consideration to an IBM Attorney/Patent Professional for preparation of a patent application on April 29, 2002, and was insubstantially modified on August 22, 2002. The content of the Invention Disclosure has not been subsequently modified. The Invention Disclosure represents a fully conceived and workable invention as written. I reviewed the claims of the above-mentioned patent application prior to submission of the application to assure the claimed invention was fully supported by the

Invention Disclosure in light of the Invention Disclosure and art known at the time of the disclosure.

5. I diligently worked with outside counsel to prepare and file the above-mentioned patent application.

6. I make this Declaration to establish that my co-inventors and I conceived of the present invention at least as early as April 29, 2002, and exercised due diligence from that date to the date of filing for the above-identified patent application.

7. I further declare that all statements made herein of my own knowledge are true and all statements made on information and belief are believed to be true and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment or both under Section 1001 of Title 18 of the United States Code, and that such willful, false statements may jeopardize the validity of the above-identified patent application or any patent issuing thereon.

  
CHRISTOPHER J. PAVLOVSKI

Date: Monday, 28<sup>th</sup> May 2007

EXHIBIT "A"

6169-367



## Disclosure BOC8-2002-0056

Prepared for and/or by an IBM Attorney - IBM Confidential

Created By Tom Creamer On 04/29/2002 03:52:29 PM EDT

Last Modified By Elaine Venturelli On 08/22/2002 11:16:42 AM MDT

Required fields are marked with the asterisk (\*) and must be filled in to complete the form .

### \*Title of disclosure (in English)

Voice-to-Text Reduction for Real Time IM/Chat/SMS

### Summary

Status	Search Results Received
Final Deadline	
Final Deadline Reason	
*Processing Location	
*Functional Area select	SW/C Solutions and Integration (Templeover)
Attorney/Patent Professional	Richard Temin/IBM
IDT Team select	James Smith/Austin/IBM James Smith/Austin/IBM James Smith/Austin/IBM
Submitted Date	04/29/2002 04:15:08 PM EDT
*Owning Division select	
Incentive Program	
Lab	
*Technology Code	
Score	

### Inventors with a Blue Pages entry

Inventors: Tom Creamer, IBM, Christopher Pavlovski, IBM, Peeyush Jaiswal, IBM

Inventor Name	Inventor Serial	Div/Dept	Inventor Phone	Manager Name
Creamer, Thomas E.	66423	0223	975-2169	James Smith
> Pavlovski, Christopher J.	66512	0223	975-2169	James Smith
Jaiswal, Peeyush	76733	0204/HQ	975-2169	Davis, Brent

> denotes primary contact

### Inventors without a Blue Pages entry

IDT Selection


Attorney/Patent Professional Richard Temin/Boca Raton/IBM

Disclosure  
in plain

Sandra Garcia Austin/Contr/IBM  
James Smith Austin/IBM  
Patricia Macduca/Austin/Contr/IBM

Response Due to IP&L - 05/30/2002

**\*Main Idea**

To view the main idea for this disclosure, click on this doclink --->  (If you are prompted to enter a server name, please enter D01DB016)

**\*Critical Questions (Questions 1-9 must be answered in English)**

**\*Question 1**

What date was the invention workable? ☐ Yes ☐ No Please format the date as MM/DD/YYYY  
Workable means a date when you knew that your design would solve the problem.

**\*Question 2**

Is there any planned or actual publication or disclosure of your invention to anyone outside IBM? ☐ Yes ☐ No

If yes, Enter the name of each publication or patent and the date published below.

Publication/Patent:  
Date Published or Issued:

Are you aware of any publications, products or patents that relate to this invention? ☐ Yes ☐ No

If yes, Enter the name of each publication or patent and the date published below.

Publication/Patent:  
Date Published or Issued:

**\*Question 3**

Has the subject matter of the invention or a product incorporating the invention been sold, used internally in manufacturing, announced for sale, or included in a proposal? ☐ Yes ☐ No

Is a sale, use in manufacturing, product announcement, or proposal planned? ☐ Yes ☐ No

If yes, identify the product known and indicate the date of planned date of sale, announcement, or proposal and to whom the sale, announcement or proposal has been or will be made.

Product  
Version/Release  
Trade Name  
Date  
To Whom

If more than one, use cut and paste and append as necessary in the field provided.

**\*Question 4**

Was the subject matter of your invention or a product incorporating your invention used in public or, outside IBM, or in the presence of non-IBM personnel? ☐ Yes ☐ No  
Yes, give a date. Please format the date as MM/DD/YYYY.



**\*Question 5**

Have you ever discussed your invention with others not employed at IBM?

If Yes, please provide the following information: Name of the individual, the employer, date discussed, under ODA, and CDA if applicable.

**\*Question 6**

Has the invention, in any way, started or developed under a government contract?

If Yes, enter the contract number.

**\*Question 7**

Was the invention made in the course of any alliance, joint development or other contract activities?

If Yes, enter the following:

Name of Alliance, Contractor or Joint Developer

Contract ID number

Relationship contact name

Relationship contact E-mail

Relationship contact phone

**\*Question 8**

Have you or any of the other inventors submitted this same invention disclosure or a similar invention disclosure previously?

If yes, please provide disclosure number below.

**\*Question 9**

Are you or any of the other inventors aware of any related inventions disclosures submitted by anyone in IBM previously?

If Yes, please provide the docket or disclosure number or any other identifying information below.

**Question 10**

What type of companies do you expect to compete with inventions of this type? Check all that apply.

☐ Manufacturers of enterprise servers  
☐ Manufacturers of entry servers  
☐ Manufacturers of workstations  
☐ Manufacturers of PCs  
☐ Non-computer manufacturers  
☐ Developers of operating systems  
☐ Developers of networking software  
☒ Developers of application software  
☒ Integrated solution providers  
☒ Service providers  
☒ Other (Please specify below)  
Manufacturers of wireless handheld devices, such as PDAs, Mobile phones, etc.

**Question 11**

If the invention relates to a product or service that is outside the scope of your business unit, please perform the IBM business unit(s), IBM location(s), or individual(s) within IBM that you think would provide a good evaluation of your invention.  
Devish Jainwal/PVC/Voice Systems

Patent Value Tool (Optional) - this may be used by the inventor and attorney to assist with the evaluation of the invention.

The Patent Value tool can be used by the inventor(s) to determine the potential licensing value of your invention.  
Market:

\*Question 1: What is the anticipated annual market size (in dollars) that will be captured by your invention?

Reason(s) for above Answer:

Claims:

\*Question 1: How new is the technical field?

Reason(s) for above Answer:

\*Question 2: How central is the invention to the product(s) which might be expected to contain the invention?

Reason(s) for above Answer:

\*Question 3: What is the scope of the claim?

Reason(s) for above Answer:

Portfolio Need:

\*Question 1: What are the portfolio needs in the area of your invention?

Reason(s) for above Answer:

Exploitation & Enforcement:

\*Question 1: How easily can the use of the invention by a competitor be detected?

Reason(s) for above Answer:

\*Question 2: How easily can the use of the invention be avoided by a competitor?

Reason(s) for above Answer:

\*Question 1: Percentage of the companies producing products in the field of the invention might use this invention?

Reason(s) for above Answer:

\*Question 2: What is the value of this patent to current or anticipated Alliance Activity between IBM and other companies?

Reason(s) for above Answer:

\*Question 3: What is the value of this patent to current or anticipated Technology Transfer Activity between IBM and other companies?

Reason(s) for above Answer:

\*Question 4: Does it result in prestige to IBM?

Reason(s) for above Answer:

Evaluation:

This evaluation was entered by Elaine Venturelli/Boca Raton/IBM on 07/29/2002

Final Evaluation:

What is the final evaluation of this disclosure? Search

dated 07/26/2002

Evaluation Comments:

Final Evaluation History	Who made the final evaluation	Final evaluation date
	Elaine Venturelli/Boca Raton/IBM	7/26/2002

Search Information:

Date Sent: 07/29/2002	Target completion date: 08/29/2002	Search Results Received date: 08/29/2002
Who was the search sent to? (This area is to designate a Local searcher name or WAIP/JWAP)		
Searcher Name: [Redacted] Patentability: [Redacted] Clearance: [Redacted] Validity: [Redacted] State of Art: [Redacted]		
Reasons why not searched: Please see disclosure for details.		

Search Office Information:

Target completion date: 08/29/2002	Search has been delayed	Ship to IBM date: 08/29/2002
Section Conducted By: Nguyen		
Comments:		

**Post Disclosure Text & Drawings**

To add additional information related to this disclosure once it has been submitted, click the action button below and a new document will be opened for you to enter the new information. To view existing post disclosure information, double-click on the item in the list below (if there has been additional information entered), and the document will open for you to view.

<b>Date entered</b>	<b>Post disclosure information (comments and drawings)</b>
---------------------	--

11/12/2002	Comments by Tom Creamer, Comments by Peeyush Jaiswal
------------	--

---

Form Revised 09/01/02)

# **1 Voice to Text Reduction for Real Time Chat**

The nature of the proposed invention is a new technique for providing a real-time chat channel. The proposed invention is to deploy Speech to Text transcription and Text to Speech synthesis for real-time exchange of text messages (i.e. online chat). This solves several problems, including improvements in voice transmission efficiency (in the order of 90% improvement) and eliminates the use of keypad and keyboard devices for on-line chat. The ability to conduct on-line chat session over mobile phone is currently not practical. As such, the proposed invention enables two parties to conduct an on-line chat session on mobile phones by overcoming the limitations of these devices. This has many potential applications that extend beyond mobile phones, and is particularly suited to several environments that exhibit the following restrictions:

1. Low bandwidth environments.
2. Devices that have poor input capabilities.
3. Devices that have poor output capabilities.

As suggested, the most obvious application of the invention is the use of real-time chat over mobile phones. Present day mobile device have to deal with all three problems listed above (low bandwidth network, poor text input, and poor visual display). More specifically, the proposed invention can be used in several ways to overcome these limitations, these are:

1. Voice Input-Output with text compression, and
2. Voice Input transcription for real time chat.

In addition to the above two proposed uses, the invention can be used to function as a language translation function between two parties, hence additional applications are:

3. Voice Input-Output with Language translation.
4. Voice Input transcription with language translation.

The proposed invention goes well beyond previous inventions that propose the use of speech transcription technologies as a command interface only. Furthermore, the use of present day speech to text (transcription) and text to speech (using an appropriate synthesis algorithm) technologies may applied. This means that the proposed invention is technically feasible.

## **1.1 Voice to Text Compression**

Both techniques extend the Voice to Text Compression benefit outlined, hence reducing the bandwidth requirements significantly. The voice compression benefit is now described. The compression benefit is achieved when compared to the conventional transmission of a voice signals that are compressed using techniques such as Codec voice encoding. The proposed invention has the sending party voice transmission converted to text, (this may be achieved using present day transcription techniques). The text (which may be further compressed) is then transmitted to the receiver, and at the receiving end the text stream is then converted to speech. To reconstruct the original voice of the sending party a previously recorded voice signature is applied during the text-to-speech synthesis conversion at the receiver. This process is able to achieve over a 90% compression improvement over the conventional Codec approaches. The following diagram, Figure 1, illustrates the notion.

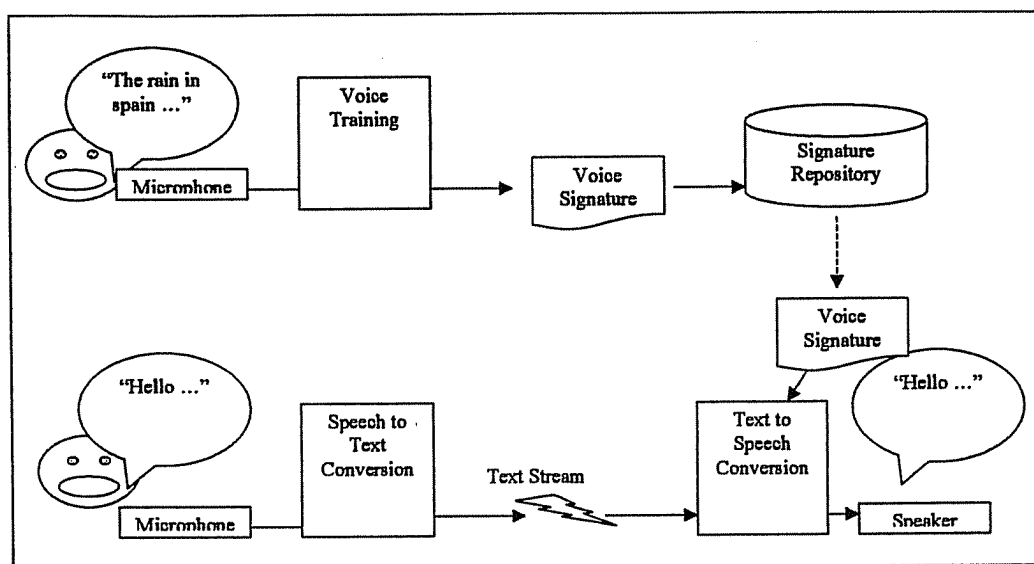


Figure 1. Voice Signature Capture and Voice to Text Compression

It has been suggested that the error rate of entering text is in the order of 10-20% [ref]. Using present day technologies (such as Via voice, and text to speech synthesis techniques) a similar error rate may be achieved, without the need for the user to enter text.

## 1.2 Voice Input-Output with text compression

The proposed invention may be fundamentally extended in two ways. The first approach is described in this section, where two parties are able to conduct a voice enhanced on-line chat session. The following diagram illustrates how the sending party's voice transmission is converted into a text stream (using transcription technologies). The text stream is then forwarded onto the receiving party. At the receiving end, the text stream is converted back to a voice stream using the previously recorded voice signature of the sending party (see Figure 1). As such the reconstructed signal is formed in the voice print of the sending party.

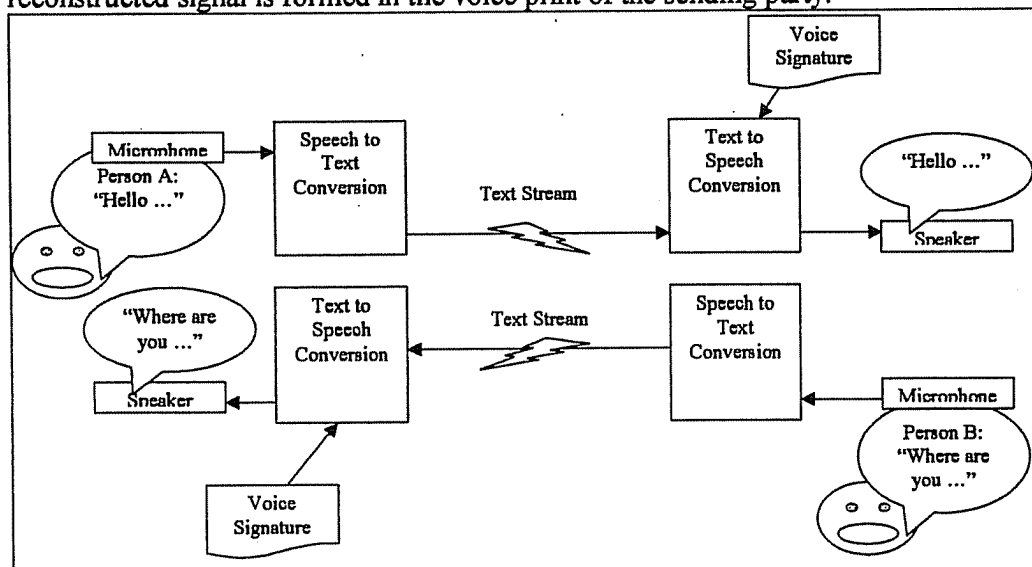


Figure 2. Voice to Text Compression

Several benefits are apparent with approach including the compression of the voice stream to a text stream, requiring a lower transmission bandwidth – hence lower cost for the delivery, overcoming device input capability, and overcoming device output capabilities. Shown at Figure 2 is the full duplex operation of the proposed invention.

### 1.3 Voice Input transcription for real time chat

An alternative extension of the proposed invention is the use of voice transcription for entering text into an online chat session, most notably over a mobile phone. The following diagram illustrates the operation, see Figure 3.

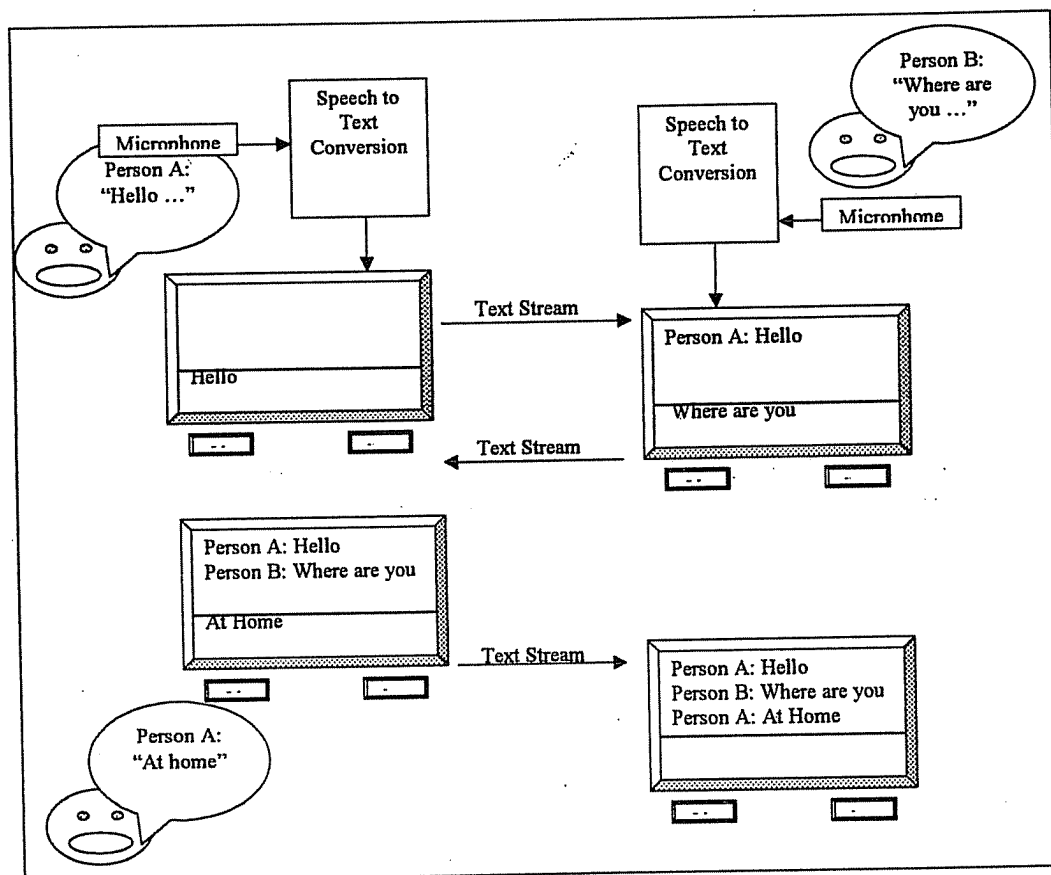


Figure 3. Voice to Text Conversion

Under this approach the sender's voice is converted into a text stream, overcoming the device input restriction of small devices. The text stream is then forwarded onto the receiver as in the normal on-line chat scenario. In reply, the receiver would also have their voice transmission converted into the reply text.

### 1.4 Voice Input-Output with Language translation

The final proposed use of the invention is to extend the solution to provide real-time language translation. Real time language translation is presently an unsolved problem and is solved by the proposed invention. The basic idea is to extend the proposed use described in section 1.2, by adding a language translation engine to the text stream prior to the text to speech voice conversion. The resultant effect is for the sending party to be heard in the native language of the receiving person. This heard in the

sending parties voice, using the voice signature. The following diagram, Figure 4, illustrates the proposed use.

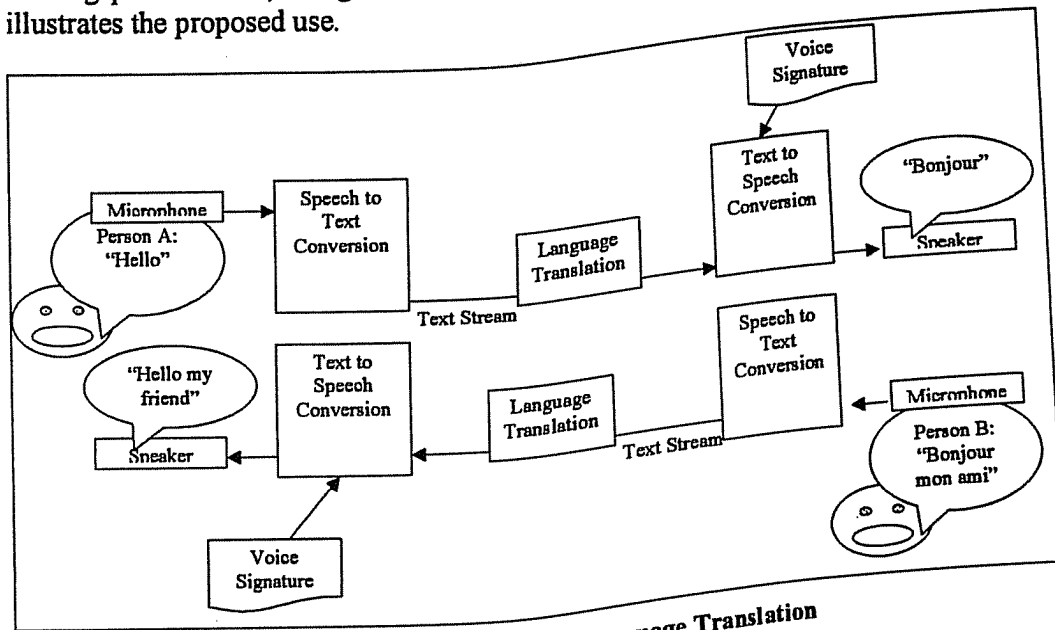


Figure 4. Voice to Text with Language Translation

### 1.5 Voice Transcription with Language translation

The final approach is to use voice transcription for real time chat with language translation, the following diagram illustrates the approach to be taken.

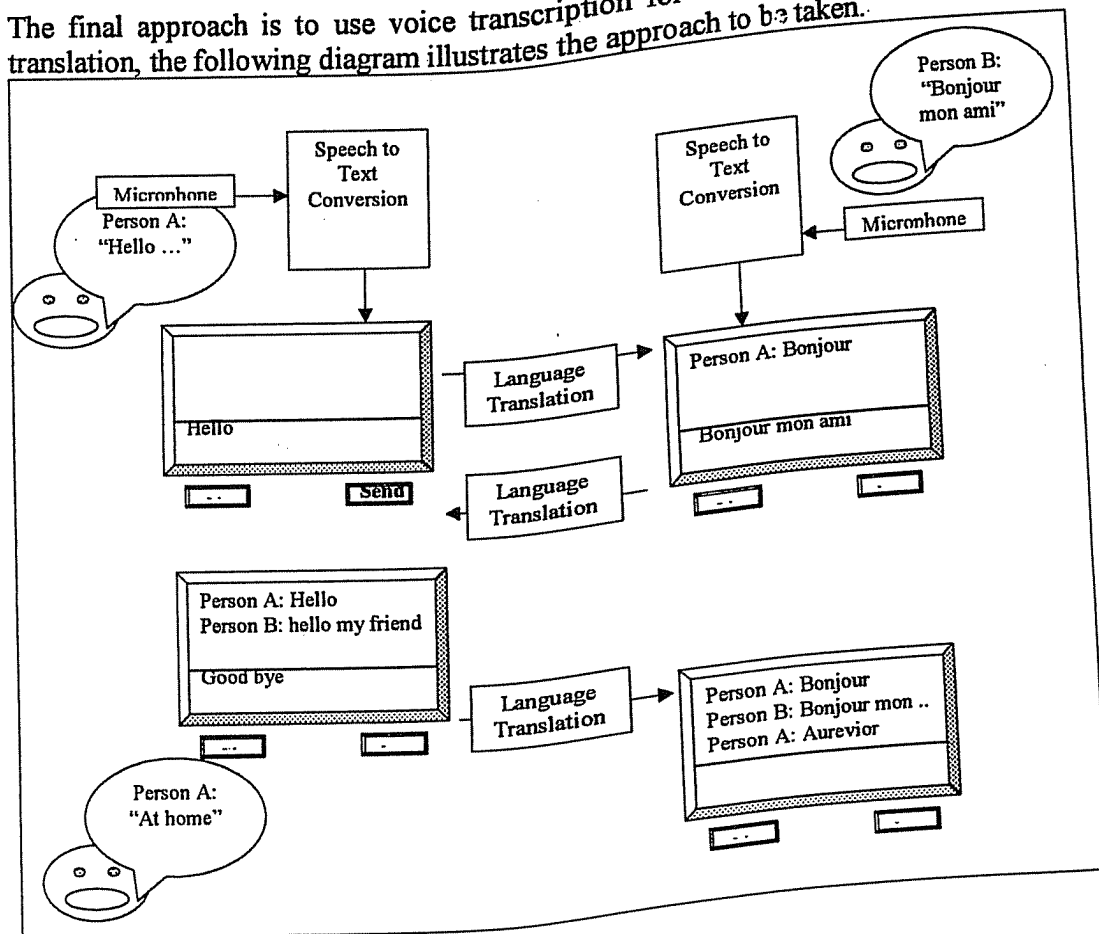




EXHIBIT "B"

OK 10  
File H.L.



## Post Disclosure Information for BOC8-2002-0056

Prepared for and/or by an IBM Attorney - IBM Confidential

Created By Tom Creamer On 11/12/2002 01:45:06 PM MST

Last Modified By Tom Creamer On 11/12/2002 02:03:12 PM MST

Required fields are marked with the asterisk (\*) and must be filled in to complete the form .

The following people are responsible for these comments Tom Creamer/Fort Lauderdale/IBM, Peeyush Jaiswal/Fort Lauderdale/IBM

There are two additional claims that are unique to this disclosure:

1. The concept of the intermediary systems including a Voice Portal which allow the users to create "user preferences" (aka profiles). These user preferences allow for user defined grammars to be produced by each individual user. These user defined grammars are specific to a particular conversation. An example would be the change a chat phrase of "CU" into a voice translation of "see you". Another example would be to say "bye" which is translated to chat text as "later dude".
2. Using the Voice Portal, within a multiple chat session each user can control which party gets which part of the conversation. For example Mary wants to setup sessions between herself and her two friends, Jane and Linda. This session (conversation) is to be controlled such Jane never hears parts of the conversation with the key words "mall". This is because Mary has always had bad experiences with Jane when they go to the mall. If Linda asks about going mall, Mary wants that part of the conversation to become private.



EXHIBIT "C"

8051 Congress Avenue  
Boca Raton, FL 33487

6169-367

December 26, 2002

Akerman, Senterfitt  
222 Lakeview Avenue  
4th Floor  
West Palm Beach, FL 33401

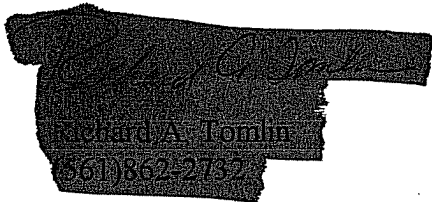
REF: Invention Disclosure: BOC8-2002-0056  
Title: Voice-to-Text Reduction for Real Time IM/Chat/SMS  
IBM Docket: BOC9-2002-0070

Dear Kevin,

Please prepare and file the above referenced case with the U.S. Patent and Trademark Office. A copy of the invention disclosure, patentability search results and inventor's comments are enclosed for your use in preparation of the application in accordance with IBM's format.

Thank you for your assistance in this matter.

Sincerely,



Richard A. Tomlin  
561 862-2732

Enclosures

RECEIVED

DEC 31 2002

AKERMAN, SENTERFITT & ASSOCIATES, P.A.

EXHIBIT "D"



Boca Raton  
Fort Lauderdale  
Jacksonville  
Miami  
Orlando  
Tallahassee  
Tampa  
West Palm Beach

Direct Dial: 561-671-3658  
E-Mail: [kcuenot@akerman.com](mailto:kcuenot@akerman.com)

January 7, 2003

[REDACTED]  
IBM Corporation  
[REDACTED]  
Boca Raton, FL 33487

RE: New U.S. Patent Application  
VOICE-TO-TEXT REDUCTION FOR REAL TIME IM/CHAT/SMS  
IBM Docket No. BOC9-2002-0070; Our Reference No.: 6169-367

Dear [REDACTED]

Thank you for your letter dated December 26, 2002. In accordance with IBM standard protocol, a patent application will be prepared and filed in the above-referenced matter on or before June 24, 2003. Notwithstanding, we will strive to prepare the patent application in an expedient manner.

As always, thank you for allowing us to be of assistance to you.

Very truly yours,

AKERMAN SENTERFITT

Kevin T. Cuenot

KTC/aa

cc: Gregory A. Nelson, Esquire